

Number Square Patterns

0	1	2	3	4	5
1	2	3	4	5	6
2	3	4	5	6	7
3	4	5	6	7	8
4	5	6	7	8	9
5	6	7	8	9	10

Draw an outline around any 2 by 2 square.

1. Look at the numbers in the square. What patterns do you see?
2. Use addition to find another pattern.
3. Use multiplication to find another pattern.

Draw an outline around any 3 by 3 square.

1. What patterns do you see?
2. Use addition to find another pattern.
3. Use multiplication to find a pattern with the four corner numbers.

Draw an outline around a larger square.

1. What patterns do you see that are similar to the patterns you saw for the smaller squares?

Extensions:

1. What is the sum of any three horizontally adjacent numbers?
2. What is the sum of any three vertically adjacent numbers?
3. What is the sum of any two-by-two square of numbers?
4. What is the sum of any three-by-three array of numbers?
5. What is the sum of any ten-by-ten array of numbers?
6. What is the sum of any cross of five numbers?
7. What is the sum of any three diagonally adjacent numbers?
8. What is the sum of any four diagonally adjacent numbers?

9. What is the sum of any five diagonally adjacent numbers?
10. Find at least three more questions like these that and describe the rules for them.

Credits:

Some of the Original problem and all of the Extensions by Ted Lewis of The Pacific insititute of the Mathematical Sciences.

Editting and multiplication questions by Gord! © 2005 Galileo